ABSTRACT

ELECTRICAL LEAD STRUCTURES FOR MAGNETORESISTIVE SENSORS FOR MAGNETIC HEADS AND FABRICATION METHOD THEREFOR

A magnetic head including an electrical lead layer that is comprised of a material having an ordered crystalline structure. In a preferred embodiment, the ordered crystalline structure of the electrical lead is epitaxially matched to the crystalline structure of the hard bias layer upon which it is formed, and there is no need for a seed layer for the electrical leads. Electrical leads having an ordered crystalline structure, particularly a B2, $L1_0$, $L1_1$, $L1_2$ and $D0_3$ structure, will have significantly reduced resistivity over the prior art electrical leads that are typically composed of rhodium or tantalum. As a result, thinner electrical leads can be fabricated which carry the same, or even greater, current than the prior art rhodium or tantalum leads. The preferred leads are comprised of NiAl having a B2 crystalline structure, and alternative embodiments are comprised of CuAu, Cu_3Au, Ni_3Al and Fe_3Al.